Green Point Sink Slope Stabilization

01-HUM-299 – PM 20.2/20.5
EA 42370

Initial Study
with Proposed Mitigated Negative Declaration

Prepared by the
State of California Department of Transportation

July 2011

General Information About This Document

What's in this document?

The California Department of Transportation (Caltrans) has prepared this Initial Study, which examines the potential environmental impacts of alternatives being considered for the proposed project located in Humboldt County, California. The document describes the proposed project, the existing environment that could be affected by the project, and potential impacts from the project, and the proposed avoidance, minimization, and/or mitigation measures.

What should you do?

- Please read this Initial Study. Additional copies of this document, as well as the technical studies, are available for review at the Caltrans District Office at 1656 Union Street, Eureka, CA, the Humboldt County Library Main Library, 1313 Third St., Eureka, CA, and the Blue Lake Branch Library, 111 Greenwood St., Blue Lake, CA.
- We welcome your comments. If you have any concerns regarding the proposed project, you can request a public meeting or send your written comments to Caltrans by the deadline. Submit comments via U.S. mail to Caltrans at the following address:

  Linda Evans
  North Region Environmental, E-1 Branch
  California Department of Transportation
  1656 Union Street
  Eureka, CA 95501

  Submit comments via email to: Linda_Evans@dot.ca.gov.
- Submit comments by the deadline: August 26, 2011.

What happens next?

After comments are received from the public and reviewing agencies, Caltrans may: 1) give environmental approval to the proposed project, 2) do additional environmental studies, or 3) abandon the project. If the project is given environmental approval and funding is appropriated, Caltrans could design and construct all or part of the project.

For individuals with sensory disabilities, this document is available in Braille, large print, on audiocassette, or computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: Linda Evans, 1656 Union St. Eureka, CA 95501, or 707-441-5840, or use the California Relay Service TTY number, 711.

Green Point Sink Slope Stabilization
01-HUM-299-PM 20.2/20.5
EA 42370

Initial Study with Proposed Mitigated Negative Declaration

Submitted Pursuant to: (State) Division 13, California Resources Code

THE STATE OF CALIFORNIA
Department of Transportation

July 25, 2011
Date of Approval

Cindy Anderson, Office Chief
North Region Environmental Services – North
California Department of Transportation

State of California
Department of Transportation

SCH Number:
01-HUM-299-20.2/20.5
EA 42370

Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes to make repairs and to stabilize two segments of State Route (SR) 299. Location 1 is located at Post Mile 20.2 and Location 2 is at Post Mile 20.5. Work would include realigning the lanes, installing underdrains and constructing two tieback walls.

Determination

Caltrans has prepared an Initial Study for this project and, pending public review, expects to determine from this study that the proposed project would not have a significant effect on the environment for the following reasons:

- The proposed project would have no effect or a less than significant effect on agricultural resources, air quality, cultural resources, geology/soils, hazardous materials, land use/planning, mineral resources, noise, population/housing, public services, recreation, transportation/traffic, utilities/service systems or visual aesthetics.
- The proposed project would have less than significant impact on biological resources and hydrology/water quality based on the following mitigation measures:
  1. Off-site mitigation would be provided for impacts to wetlands, waters of the State and riparian areas.
  2. Onsite revegetation planting would be provided to replace trees and shrubs removed prior to construction

_____ _____

Cindy Anderson, Office Chief
North Region Environmental Services – North
California Department of Transportation

Date

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Initial Study

Project Title

Green Point Sink Slope Stabilization

Lead Agency Name, Address and Contact Person

California Department of Transportation
Attention: Linda Evans
1656 Union Street
Eureka, CA 95501

Project Location

The project is located 14 miles east of Blue Lake on State Route 299 between post miles 20.2 and 20.5. The elevation of the site is approximately 1,600 feet above mean sea level. Lord-Ellis Summit rises to 2,263 feet about two miles west of the project limits. The project is within the Redwood Creek drainage.

Project Sponsor's Name and Address

California Department of Transportation
1656 Union Street
Eureka, CA 95501

Purpose and Need

The project is needed to reduce annual maintenance cost and prevent catastrophic failure of this segment of the highway. The purpose of this project is to repair the two segments of the highway, by reconstructing the roadway and drainage system in conjunction with constructing tieback walls that will together address the stability problem of the subgrade below the roadbed.

Project Description

The project consists of the repair of two segments of Highway 299 that are failing due to the highway alignment crossing two historic landslides. Poor surface and subsurface drainage conditions coupled with lateral movement and subsidence of the subgrade below the roadway are contributing factors to the slope instability. During the rainy season, the slope saturation triggers movement of the underlying landslides. Continuous maintenance work to keep the highway open points to the need for permanent repair.

Several design options were considered during the preliminary scoping of this project and were developed as a result of recommendations from the Preliminary Geotechnical Report. The options included features such as drainage wells, interceptors, underdrains and drainage galleries; soldier pile tieback walls; viaducts; upslope retreat of the highway; removal of asphalt concrete (AC) lifts and replacement with lightweight fill and an AC overlay; and construction of stabilization trenches.

Ultimately, upon review of the geotechnical survey results and the range of proposals, a few of the design features emerged that would best address the site conditions that contribute to the slope instability, and were chosen to be included in the project design. These proposed project features include an upslope widening of the highway, installation and realignment of culverts, and construction of two soldier pile tieback walls below the roadway. The tieback walls will be as deep as the failure plane and as long as the width of the failure prism. Current estimates call for a 46' high by 408' long wall at post mile 20.2 (Location #1) and a 50' high by 544' long wall at post mile 20.4 (Location #2). The walls would be constructed to be free-draining to provide drainage and prevent water pressure from increasing the stress on the wall members. Drainage collected from behind the walls would be routed and released downhill of the structures. Approximately 482 linear feet of drainage would be routed into culverts and covered with roadway fill. Approximately 148 linear feet of culvert would be daylighted to flow as surface waters.

Shifting the centerline alignment slightly away and uphill from the current centerline location is proposed. This would lessen the load on the landslide mass below the roadbed and reduce the overburden on the slide. A second benefit to realignment is a reduction in the depth to the landslide plane, and thus the structure heights can be reduced.

Overhead utility lines for electricity and telephone and power poles are in conflict with the proposed construction and would need to be relocated.

Two 8-foot shoulders are proposed, and would provide space for bicyclists to navigate on the paved surface and not in the same traveled way as the motorized vehicular traffic.

As this project was being designed and developed, the need to maintain the highway at this location accelerated due to a substantial amount of rainfall during the winter of 2011. An emergency project was initiated to address the urgent need to maintain the highway. The strategy for the emergency project is to retreat upslope, install

underdrains, and replace a broken culvert to relieve the saturation that exacerbates the landslide conditions.

Coordination work continues with the following agencies: U.S Fish and Wildlife Service, U.S. Army Corps of Engineers, California Department of Fish and Game, Regional Water Quality Control Board.

A Categorical Exclusion/Categorical Exemption (CE/CE) for the emergency work was signed on May 17, 2011. The CE/CE describes emergency work which is being constructed in coordination with the plans for the permanent restoration project and a commitment to address environmental impacts from the emergency work through the permanent restoration project's environmental document and subsequent permits. Drainage improvements installed during the emergency work are consistent with the drainage design for the permanent restoration.

Surrounding Land Uses and Setting

This segment of Route 299 is just west of the intersection with Chezem Road, which had been part of the former alignment of Route 299. This project location is 14 miles east of Blue Lake in the Redwood Creek watershed. The elevation is approximately 1,600 feet above mean sea level between the two peaks of Lord-Ellis Summit two miles to the west and Titlow Hill/Berry Summit approximately eight miles to the east. Rural residences are scattered on some of the parcels nearby. The predominant land use is resource-based timber production and agricultural ranchlands.

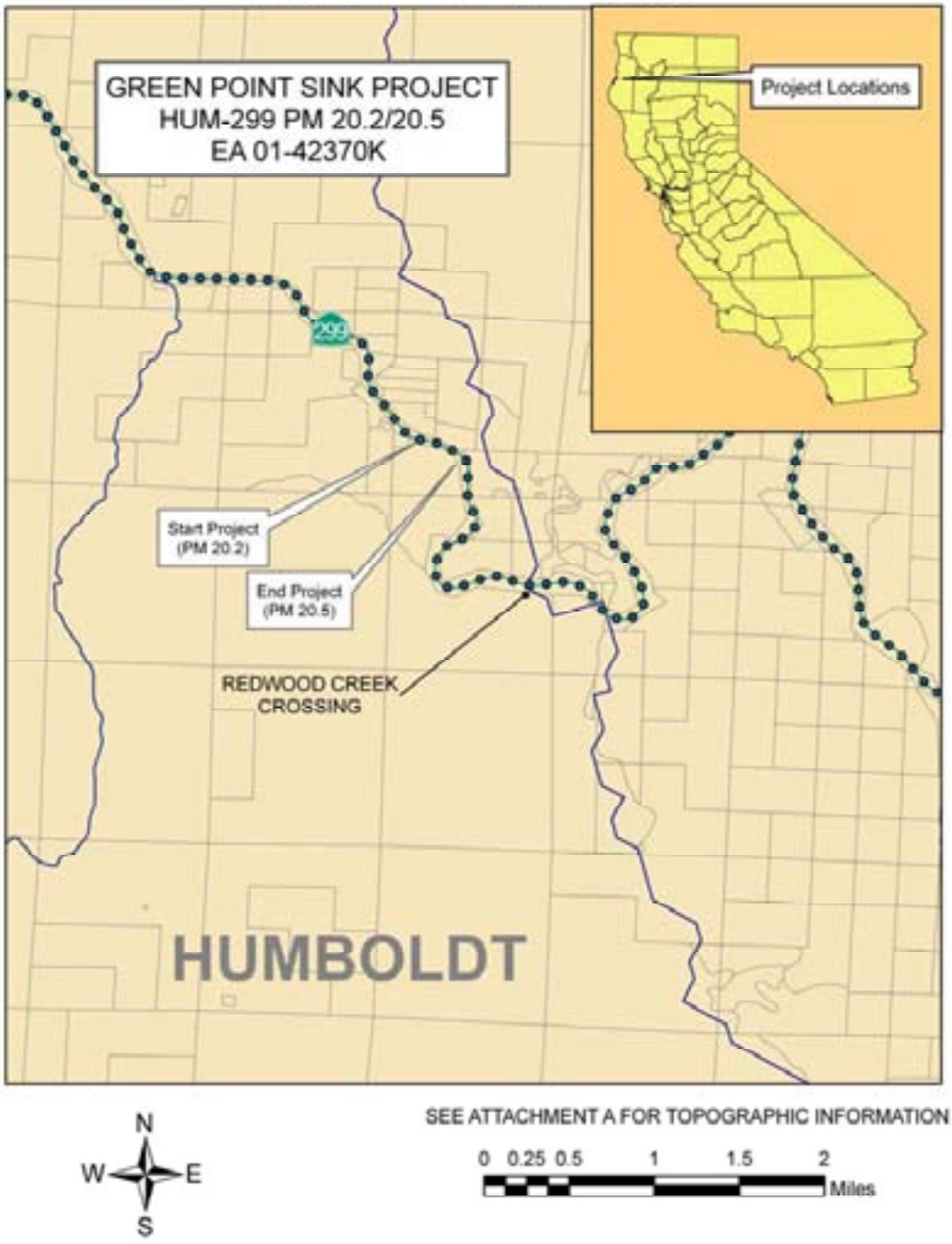
Permits and Approvals Needed

Permits and resource agency coordination and consultations will be required as follows: 404 Permit from the U.S. Army Corps of Engineers; Stream Alteration Agreement from California Dept. of Fish and Game; 401 Certification from the Regional Water Quality Control Board; Section 7 consultation with U.S. Fish and Wildlife Service for Northern Spotted Owl and Marbled Murrelet.

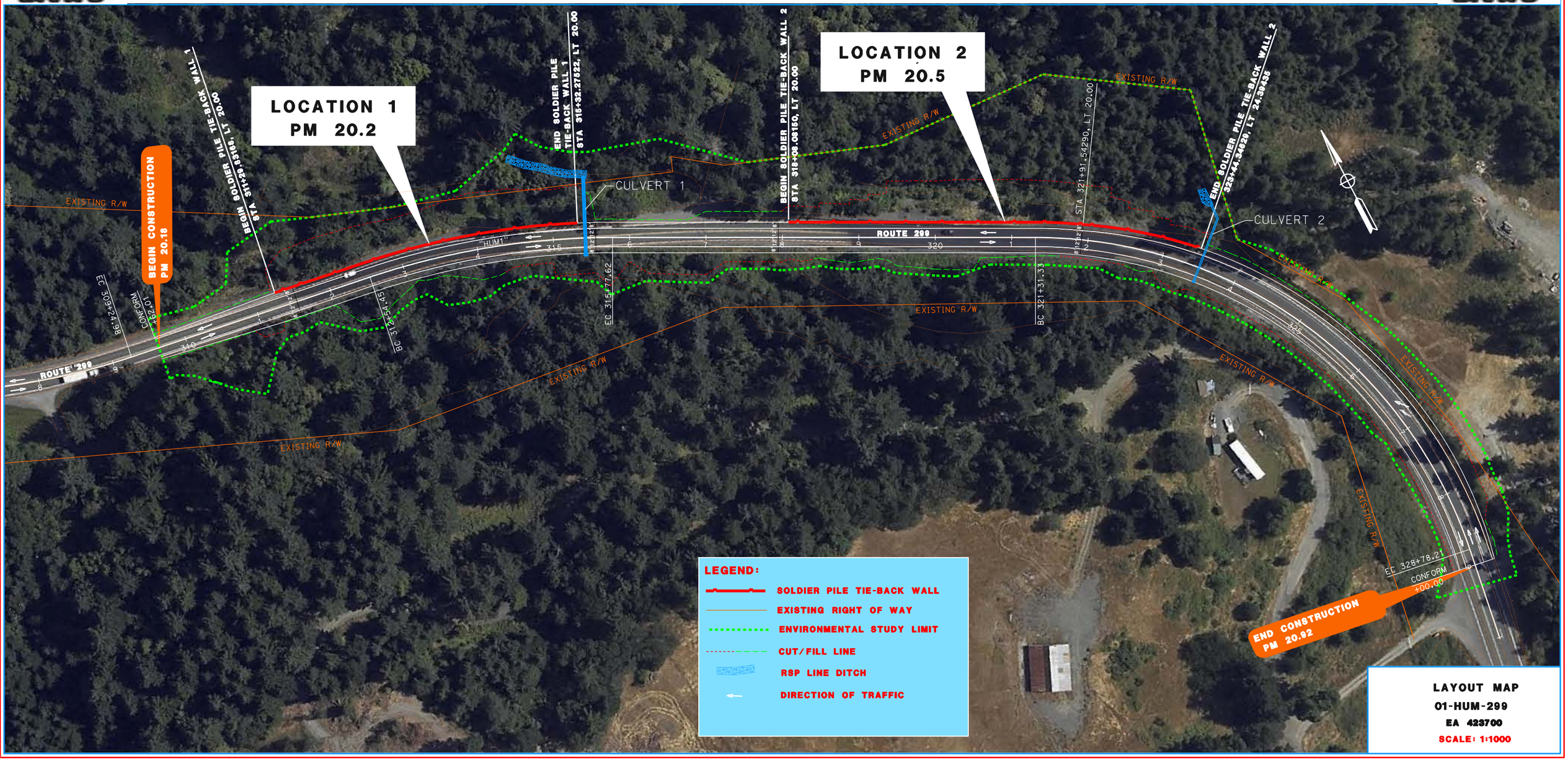
Zoning

Property adjacent to the project has General Plan land use designations of Agricultural Lands (AL20) and Timber Lands (T), and zoning is Agricultural Exclusive (AE) and Timber Production Zone (TPZ). To the east and north of the project limits is the Green Point Community Planning Area (CPA), which is a segment of the Willow Creek Community Plan and includes approximately 25 parcels.

Project Location Map



GREEN POINT SINK RESTORATION PROJECT

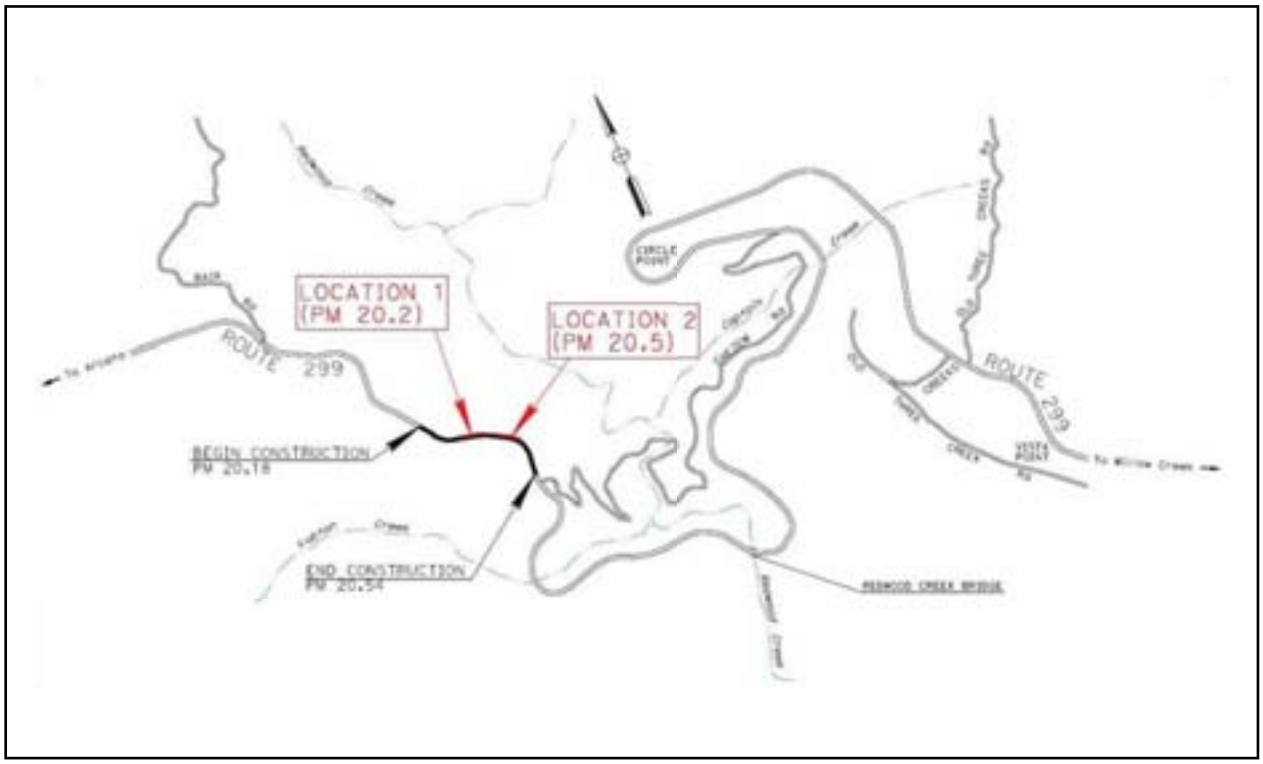


LEGEND:

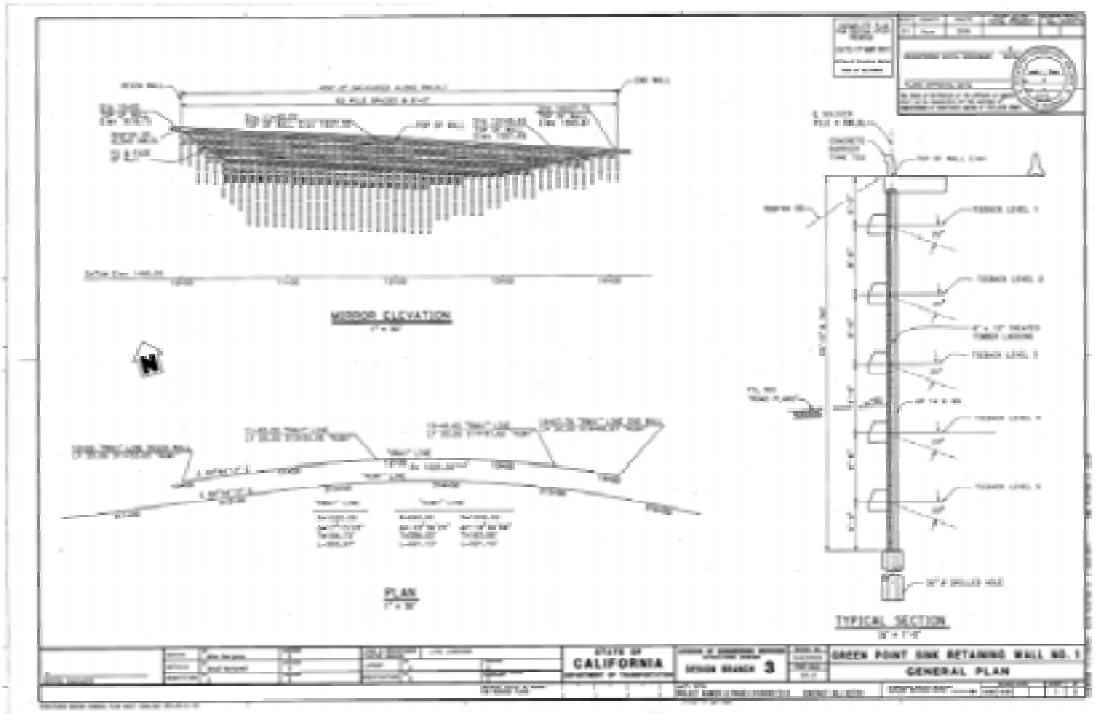
- SOLDIER PILE TIE-BACK WALL
- EXISTING RIGHT OF WAY
- ENVIRONMENTAL STUDY LIMIT
- CUT/FILL LINE
- RSP LINE DITCH
- DIRECTION OF TRAFFIC

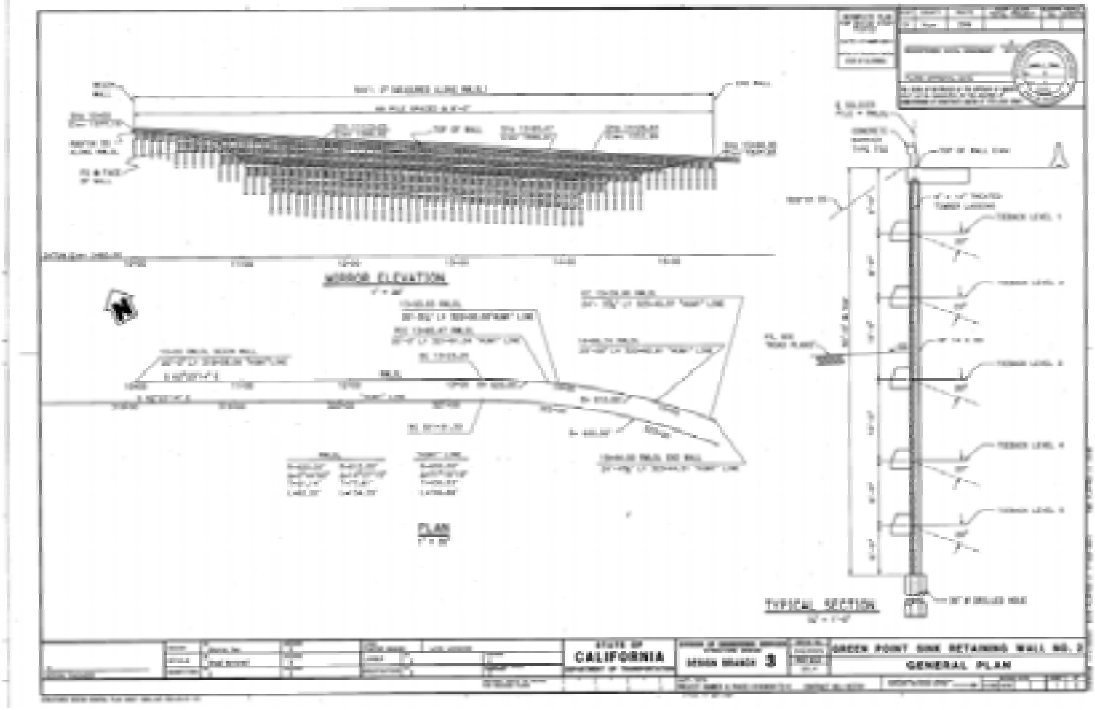
LAYOUT MAP
01-HUM-299
EA 423700
SCALE: 1:1000

Project Vicinity Map



Tieback Walls -- General Plans





Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- [ ] Aesthetics
- [ ] Agricultural Resources
- [ ] Air Quality
- [X] Biological Resources
- [ ] Cultural Resources
- [ ] Geology/Soils
- [X] Climate Change
- [ ] Hazards and Hazardous Materials
- [X] Hydrology/Water Quality
- [ ] Land Use/Planning
- [ ] Mineral Resources
- [ ] Noise
- [ ] Population/Housing
- [ ] Public Services
- [ ] Recreation
- [ ] Transportation/Traffic
- [ ] Utilities/Service Systems
- [X] Cumulative Impacts

Impacts Checklist

The impacts checklist starting on the next page identifies physical, biological, social, and economic factors that might be affected by the proposed project. The California Environmental Quality Act impact levels include "potentially significant impact," "less than significant impact with mitigation," "less than significant impact," and "no impact."

A brief explanation of each California Environmental Quality Act checklist determination follows each checklist item. The checklist is followed by a focused discussion of biological, hydrological, and cumulative impact issues relating to this project.

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
I. AESTHETICS — Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	X	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	X
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	X
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	☐	☐	☐	X

The project site is located within the Trinity Scenic Byway, a federal designation of Route 299 between Arcata and Redding, approximately 150 miles east.

The project would not have an adverse effect on a scenic vista, or create a new source of light. Views along the existing alignment are limited by the tree cover and topography. The visible built elements include highway infrastructure such as highway signs, culverts, asphalt pavement with traffic striping, guardrails, and unpaved turnouts.

The area of retreat and tieback walls, plus utility relocation, would result in removal of vegetation and would change the highway user's view of the roadway. Although these changes would modify the view, the visual character and quality would be comparable to the existing setting, as the project would modify an existing visual element - the highway infrastructure. Although the tieback walls introduce new elements to the area, their location downslope of the highway roadbed would make them less prominent to the landscape than if the walls were upslope.

Another recently constructed tieback wall is located approximately one mile further east on Route 299. That project necessitated vegetation removal to clear space for the wall, which was also constructed downslope of the roadway.

II. AGRICULTURE RESOURCES — In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	X

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	X
c) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	X

The project would not convert farmland or agricultural land, and would not conflict with Williamson Act contract lands.

III. AIR QUALITY — Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	X
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	X
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	X
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	X
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	X

The project would not increase highway capacity or create new sources of emissions. The project would not conflict with air quality plans, violate any air quality standards, increase pollutants, expose sensitive receptors to pollutants or create objectionable odors.

IV. BIOLOGICAL RESOURCES — Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	X	☐

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	X	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	X	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	X	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	X	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	X	☐

See Affected Environment, Environmental Consequences and Mitigation Measures: Biological Resources section of this document for details.

V. CULTURAL RESOURCES — Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	X
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	X
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	X
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	X

Based on preliminary site investigations, no historic properties have been identified for this site, therefore a finding of no historic properties affected has been determined.

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
VI. GEOLOGY AND SOILS — Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	X
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	X
ii) Strong seismic ground shaking?	☐	☐	☐	X
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	X
iv) Landslides?	☐	☐	X	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	X	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	X	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.	☐	☐	☐	X
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	X

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact

Humboldt County's General Plan Framework Plan and accompanying resource maps illustrate the project site to be in a highly unstable environment. The Office of Geotechnical Design North collected geotechnical data at this site to facilitate the analysis and to develop strategies for permanent restoration of the highway. The resultant Geotechnical Report recommends constructing tieback walls at two locations to stabilize the subgrade below the roadbed. These walls would be as deep as the failure plane and as long as the width of the failure prism. Current estimates call for a 45' high by 340' long wall at Location #1 and a 52' high by 450' long wall at Location #2. The walls would be constructed to be free-draining to accommodate drainage and to prevent water pressure from increasing the stress on the wall members. Drainage collected from behind the wall would be routed and released downhill of the structures. After completion of the project, the site would be more stable and would significantly reduce vulnerability to damage to or closure of the highway from landslides.

VII. GREENHOUSE GAS EMISSIONS:
Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

b) conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

An assessment of the greenhouse gas (GHG) emissions and climate change is included in the body of environmental document. While Caltrans has included this good faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans' determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct and indirect impact with respect to climate change. Caltrans does remain firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the body of the environmental document.

VIII. HAZARDS AND HAZARDOUS MATERIALS —
Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would	☐	☐	☐	☒

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
it create a significant hazard to the public or the environment?				
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	X
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	X
h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	X

An Initial Site Assessment (ISA) for this project has been conducted. The ISA found that the project likely has only nominal hazardous waste issues related to removing yellow thermoplastic stripe which contains lead, grinding thermoplastic stripe during cold planing (if this occurs), and disturbance of shoulder soils that contain Aerially Deposited Lead (ADL). Caltrans will have the contractor prepare a Lead Compliance Plan (LCP) for worker safety to address the hazards present. Removed thermoplastic stripe will be treated as a hazardous waste until tested for disposal. For the purposes of determining the appropriate environmental documents required for the project, the work site(s) should not be considered to be on the *Hazardous Waste and Substances Site List (Cortese List)*.

IX. HYDROLOGY AND WATER QUALITY — Would the project:

a) Violate any water quality standards or waste discharge requirements?	☐	☐	X	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	X
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the	☐	☐	X	☐

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
course of a stream or river, in a manner that would result in substantial erosion or siltation on- or offsite?				
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or offsite?	☐	☐	X	☐
e) Create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	X
f) Otherwise substantially degrade water quality?	☐	☐	X	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	X
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	X
i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	X
j) Result in inundation by a seiche, tsunami, or mudflow?	☐	☐	☐	X

See Affected Environment, Environmental Consequences and Mitigation Measures: Storm Water/Water Quality of this document for more details.

X. LAND USE AND PLANNING — Would the project:

a) Physically divide an established community?	☐	☐	☐	X
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	X
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	X

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact

The highway serves as a major east-west route that connects the north coast to the central valley (i.e. Eureka and Redding, respectively). The route also serves as the primary access route for logging and lumber trucks as well as tourism traffic in the summer months. Humboldt County Association of Governments (HCAOG) identifies Route 299 as the "second most important interregional State Highway Route in the County".

The Route Concept Report (1998) refers to the route as a "principal arterial serving interregional and interstate traffic". Functionally, the report designates the route as a 2-lane conventional highway with passing lanes. The District 2 Route Concept Report for the highway designates the route as a 2-lane expressway with passing lanes. Each Concept Report identifies a Level of Service Concept for the route as "C". There are no restrictions for Surface Transportation Assistance Act (STAA) vehicles along HUM 299 in District 1. However, District 2 does have STAA restrictions along a portion of the highway between Weaverville and the City of Redding (Buckhorn Grade). Plans are currently being developed to remove this restriction along the Buckhorn Grade segment of the route.

XI. MINERAL RESOURCES — Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	X
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	X

The excess material generated by this project would be the property of the contractor. Unused excess materials would be disposed of at permitted locations.

"No Impact" determinations in this section are based on the scope and location of the project.

XII. NOISE — Would the project result in:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	X
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	X
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	X	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	X	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working	☐	☐	☐	X

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
in the project area to excessive noise levels?				
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	X

No pile driving is proposed to take place during construction. Piles for the construction of the tieback walls would be vibrated into place. Center line and shoulder rumble strips are proposed as part of the road surface finish. The scattered rural residences and their distance from the highway suggest that the noise from rumble strips would not be a substantial change from the ambient highway traffic noise, although a project and site-specific noise study has not been conducted to specifically derive this conclusion.

"No Impact" and "Less than significant impact" determinations in this section are based on the scope and location of the project.

XIII. POPULATION AND HOUSING — Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	X
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	X
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	X

The project site is in a sparsely populated rural environment, 15 miles east of the City of Blue Lake and 18 miles west of Willow Creek, an unincorporated community. The project would take place within the existing highway right of way, not directly impacting adjacent privately owned parcels.

"No Impact" determinations in this section are based on the scope and location of the project.

XIV. PUBLIC SERVICES —				
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☐	X

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
Police protection?	☐	☐	☐	X
Schools?	☐	☐	☐	X
Parks?	☐	☐	☐	X
Other public facilities?	☐	☐	☐	X

Refer to text in Section XVI "Transportation/Traffic" for impacts to response times.

Two closures, one-way reversible traffic control through the work zone and a lane reduction in the passing lane east of the work zone, are proposed in the Traffic Management Plan within the project limits.

"No Impact" determinations in this section are based on the scope and location of the project.

XV. RECREATION —

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	X
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	X

"No Impact" determinations in this section are based on the scope and location of the project.

XVI. TRANSPORTATION/TRAFFIC — Would the project:

a) Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☐	☐	X
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☐	X
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	X
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections)	☐	☐	☐	X

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
or incompatible uses (e.g., farm equipment)?				
e) Result in inadequate emergency access?	☐	☐	☐	X
f) Result in inadequate parking capacity?	☐	☐	☐	X
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	X

The project is anticipated to have temporary impacts to traffic during construction. A Traffic Management Plan dated April 19, 2011, identifies the following measures to control traffic during construction: one-way reversible traffic control; lane reduction; intermittent closure; shoulder closure; moving lane closure; temporary traffic signal; maximum delay of 15 minutes; possible night work. Access to driveways, side roads, and residences would be maintained at all times. Bicyclists would be accommodated through the work zone with a 4-foot traversable paved shoulder. Work would be coordinated with emergency response vehicles and the local bus system (including school buses and public systems) to minimize impacts on emergency response time and bus schedules.

"No Impact" determinations in this section are based on the scope and location of this project.

XVII. UTILITY AND SERVICE SYSTEMS — Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	X
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	X
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	X	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	X
e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's	☐	☐	☐	X

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
projected demand in addition to the provider's existing commitments?				
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	X
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	X

Traction sand traps are proposed.

See Affected Environment, Environmental Consequences and Mitigation Measures: Storm Water/Water Quality Resources section of this document for details.

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE —

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	X	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	X	☐
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	X

Affected Environment, Environmental Consequences, and Mitigation Measures

Biological Resources

This section evaluates the project's potential to affect biological resources within the project area. A Natural Environmental Study was completed in May 2011 and is available for public review.

Regulatory Setting

WETLANDS AND OTHER WATERS

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Clean Water Act (33 USC 1344) is the primary law regulating wetlands and surface waters. The Clean Water Act regulates the discharge of dredged or fill material into waters of the United States, including wetlands. Waters of the United States include navigable waters, interstate waters, territorial seas and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the Clean Water Act, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the Clean Water Act.

Section 404 of the Clean Water Act establishes a regulatory program that provides that discharge of dredged or fill material cannot be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Section 404 permit program is run by the U.S. Army of Engineers (USACE) with oversight by the U.S. Environmental Protection Agency (EPA).

The Executive Order for the Protection of Wetlands (E.O. 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, this executive order states that a federal agency, such as the Federal Highway Administration, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: 1) that there is no practicable alternative to the construction and 2) the proposed project includes all practicable measures to minimize harm.

At the state level, wetlands and waters are regulated primarily by the California Department of Fish and Game (CDFG), the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCB). Sections 1600-1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially

change the bed or bank of a river, stream, or lake to notify CDFG before beginning construction. If CDFG determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. CDFG jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the USACE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the CDFG.

The Regional Water Quality Control Boards were established under the Porter-Cologne Water Quality Control Act to oversee water quality. The RWQCB also issues water quality certifications in compliance with Section 401 of the Clean Water Act. Please see the Water Quality section for additional details.

PLANT SPECIES

The U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG) share regulatory responsibility for the protection of special-status plant species. "Special-status" species are selected for protection because they are rare and/or subject to population and habitat declines. Special status is a general term for species that are afforded varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA).

SENSITIVE SPECIES, ENDANGERED SPECIES ACT

The primary law protecting threatened and endangered species is the federal Endangered Species Act: US Code, Section 1531, et seq. See also 50 Code of Federal Regulations Part 402. This act and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems on which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration, are required to consult with USFWS to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of formal consultation under Section 7 is a Biological Opinion or an incidental take permit. Section 3 of the Federal Endangered Species Act defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or any attempt at such conduct."

California has enacted a law at the state level, the California Endangered Species Act, California fish and Game Code, Section 2050 *et seq*. The California endangered species act emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats.

The California Department of Fish and Game is the agency responsible for implementing the California Endangered Species Act. Section 2081 of the Fish and Game Code prohibits "take" of any species determined to be an endangered species or a threatened species. "Take" is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." The California Endangered Species Act allows for take incidental to otherwise lawful development projects; for these actions, an incidental take permit is issued by CDFG. For projects requiring a biological Opinion under Section 7 of the Endangered Species Act, CDFG may authorize impacts to the California Endangered Species Act species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

Federal laws and regulations pertaining to wildlife include:

National Environmental Policy Act

Migratory Bird Treaty Act

Fish and Wildlife Coordination Act

State laws and regulations pertaining to wildlife include:

California Environmental Quality Act

Sections 1600 – 1603 of the Fish and Game Code

Section 4150 and 4152 of the Fish and Game Code

INVASIVE SPECIES

On February 3, 1999, President Clinton signed Executive Order 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as "any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health." Federal Highway Administration guidance issued August 10, 1999, directs the use of the state's noxious weed list to define the invasive plants that must be considered as part of the NEPA analysis for a proposed project.

Affected Environment

The western portion of Route 299 traverses the Coast Range. Within the project limits, the highway is perched on the northeastern flanks of Lord-Ellis summit, approximately 2 miles east of the summit on the highway. The next summit, Berry Summit, is approximately 8 miles east of the project limits. The project site is within the Redwood Creek watershed. Drainages and roadside ditches within the project limits are intermittent. The drainages have well-defined bed and bank features and discernible ordinary high-water marks.

Five roadside wetlands, apparently fed by water seeping from the hill slope above, were identified in the environmental study area. These wetlands have generally developed where the highway road prism acts as a berm, causing water to pond adjacent to the roadway. The five roadside seep wetlands in the project limits are located very close to the existing roadway and exhibit a high degree of disturbance.

A Jurisdictional Determination request was transmitted to the U.S. Army Corps of Engineers in April 2011. A revisit to the site on April 22, 2011, resulted in some modifications to the maps, but the acreage of impact remained unchanged. The wetland report identifies 0.079 acres of wetlands within the project study limits, all of which would be impacted by the project. Approximately 0.056 acre of other waters of the United States was identified in the project study limits.

Four intermittent drainages, totaling 0.023 acre, were mapped within the project limits. While surface water was present the drainages are not relatively permanent waterways (RPW). The drainages convey water directly to Redwood Creek, an impaired watershed for Total Maximum Daily Load (TMDL). Due to the steepness of the topography, these drainages do not support fish passage opportunities.

Douglas fir forest is the dominant vegetation community in the study area. The vegetation is a relatively young forest with a diverse understory atypical of old growth forests. The forest is a mixture of Douglas fir, Pacific madrone, tan oak, California laurel and black oak. Approximately 35% of the plant species noted in the Botanical Report were nonnative. Ruderal vegetation is present along the road shoulders and on vegetated cut banks on the southeastern end of the study area.

The Douglas fir forest habitat supports a diversity of wildlife species including, but not limited to, the Del Norte salamander, tailed frog, fisher, and northern spotted owl.

Special Status Plant species within the project limits include Coast Fawn Lily (*Erythronium revolutum)* and Giant fawn lilies *(Erythronium oregonum),* listed as 2.2 on the California Native Plant Society's rare plant list.

USFWS did not require Northern Spotted Owl surveys to be conducted. Nearby property is owned by Green Diamond, a timber management company. Two active nests and one nest without data are located on Green Diamond lands within 1.2 miles of the project.

Environmental Consequences

1. Approximately 0.14 acre of wetlands and other waters of the U.S. would be filled or otherwise impacted by this project. Due to the proximity of the wetlands to the existing highway, impacts could not be avoided or minimized. Mitigating wetland impacts onsite is not a viable option.

2. The highway instability is attributable, in large part, to saturated sub-surface conditions. Construction strategies to stabilize the slope include installing underdrains and culvert alignment to make room for two tieback walls,

resuming the surface drainage downslope of the walls in the existing intermittent stream channel.

3. Installation of underdrains during the emergency project maintained a flow of water source to a wetland pond located beyond the limits of the proposed project, downslope of proposed wall location #1. Because this underdrain is located in the middle of the wall location, modifications to this underdrain may be necessary during the construction of the permanent restoration project. The final design could result in a reduction of flows that supply water to the wetland. Due to a potential to impact a wetland located outside of the project limits near wall location #1 (which is being monitored during the construction of the emergency project), there may be need for additional wetland mitigation area beyond what has been accounted for in the permanent restoration project. Approximately 0.5 acres of waters of the State may be affected by both the emergency work and the permanent restoration project combined.

4. Tree and shrub removal is necessary to construct the tieback walls, to create space upslope for the roadway retreat, and to relocate utility poles and lines. Vegetation removal including clearing and grubbing would impact about 4.3 acres of conifers, hardwoods and shrubs. The riparian vegetation near the culvert inlets is sparse and provides minimal shade. These trees can be trimmed and will resprout from trunks the following spring. The vegetation at the culvert outlet will not be impacted.

5. An informal consultation with USFWS is being conducted for potential impacts to Northern Spotted Owl. The consultation would include a discussion and analysis of potential noise impacts from the introduction of rumble strips. The project "may affect, but is not likely to adversely affect" the northern spotted owl.

6. The project may affect the population of fawn lilies within the Environmental Study Limits (ESL) by temporarily impacting reproduction and growth. Lilies that are transplanted may not successfully produce viable seeds due to the stress of transplanting.

Avoidance, Minimization, and/or Mitigation Measures

1. To avoid and minimize impacts to migratory birds and northern spotted owl, tree removal would take place during the non-breeding season (September 1 to March 1). If trees need to be removed after March 1, a qualified biologist will conduct nest surveys to avoid any potential impacts to migratory birds.

2. As compensatory mitigation, Caltrans proposes to cooperate with the United States Forest Service (USFS) - Six Rivers National Forest to perform mitigation for the loss of wetlands, waters of the State and sensitive habitat at a 3:1 ratio at the Horse Mountain Botanical Area located approximately eight miles east of the project site. Some restoration has already occurred in the

area with active erosion being eliminated. The USFS believes up to 1.5 acres of wetland can be created in this area. Sufficient hydrology exists on-site. The area is unique botanically - occurring on serpentine soils - and is managed by the USFS in partnership with the California Native Plant Society. There is sufficient capacity to accommodate mitigation for impacts to wetlands from both the emergency project and the permanent restoration project.

3. Minimization efforts include using rock-lined ditches where feasible instead of culverts to keep the flow at the surface, which would provide habitat for aquatic invertebrates and amphibians.

4. Seasonally appropriate surveys for fawn lilies would be conducted before the start of construction, and lilies found within or near ground disturbance areas would be relocated outside the project area in consultation with CDFG. Plants that can be avoided would be protected behind temporary Environmentally Sensitive Area (ESA) orange fencing during construction activities.

5. While no infestations of invasive species were observed within the project area, all equipment shall be washed prior to construction to prevent the spread of any noxious weeds.

6. A site-specific revegetation plan would be developed for this project. Revegetation of disturbed areas would be done under the guidance of a Caltrans Landscape Architect and Revegetation Specialist, and would incorporate regionally appropriate native plant species.

Storm Water/Water Quality

This section evaluates the project's potential to impact water resources within the project area. A Water Quality Assessment was completed in February 10, 2010, and is available for public review.

Regulatory Setting

FEDERAL REGULATORY REQUIREMENTS

CLEAN WATER ACT

In 1972, the Federal Water Pollution Control Act was amended making the discharge of pollutants to the waters of the United States from any point source unlawful, unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. The Federal Water Pollution Control Act was subsequently amended in 1977 and was renamed the Clean Water Act (CWA). The CWA as amended in 1987 directed that storm water discharges are point source discharges. The 1987 CWA amendment establishes a framework for regulating municipal and industrial storm water discharges under the NPDES program. Important CWA sections are as follows:

- Sections 303 and 304 provide for water quality standards, criteria, and guidelines.

- Section 401 requires an applicant for any project that requires a federal permit that proposes an activity, which may result in a discharge to waters of the United States, to obtain certification from the State that the discharge will comply with any provisions set forth by the Regional Water Quality Control Board (RWQCB) and/or State Water Resources Control Board (SWRCB).

- Section 402 establishes the National Pollutant Discharge Elimination System, a permitting system for the discharges (except for dredge or fill material) into waters of the United States. RWQCBs administer this permitting program in California. Section 402(p) addresses storm water discharges.

- Section 404 establishes a permitting program for discharging dredge or fill material into waters of the United States. This permit program is administered by the U.S. Army Corps of Engineers.

The objective of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."

STATE REGULATORY REQUIREMENTS

PORTER-COLOGNE WATER QUALITY CONTROL ACT (California Water Code)

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This Act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or otherwise) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the State.

The SWRCB and RWQCBs are responsible for establishing the water quality standards (objectives) required by the CWA, and regulating discharges to ensure that the objectives are met. Details regarding water quality standards for receiving waters in the project area are contained in the North Coast RWQCB Basin Plan.

States designate uses for all water body segments and then set criteria necessary to protect these uses. Consequently, the water quality standards developed for particular water segments are based on the designated use and vary depending on such use. In addition, each state identifies waters failing to meet standards for specific pollutants, which are state-listed in accordance with Section 303(d) of the CWA. If a State determines that waters are impaired for one or more constituents and the standards cannot be met through point source controls, the CWA requires establishing Total Maximum Daily Loads (TMDLs). TMDLs assess allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed necessary to restore and maintain the chemical, physical, and biological integrity of the watershed.

The SWRCB administers water rights, water pollution control, and water quality functions throughout the State. RWQCBs are responsible for protecting Water

Quality Standards for water bodies within their regional jurisdiction using planning, permitting and enforcement authorities to meet this responsibility. Water Quality Standards consist of beneficial uses and water quality objectives. Water Quality Objectives are identified in the Basin Plan.

NPDES Permit: The SWRCB adopted the Caltrans Statewide NPDES Permit (Order No. 99-06-DWQ) on July 15, 1999. This permit covers all Caltrans rights-of-way, properties, facilities, and activities in the State. Regulations remain active until a new permit has been adopted. A new Caltrans Statewide NPDES (Statewide) Permit draft for the Department is out for public review at the time of this writing, and most likely will be adopted before this Project goes to construction.

In compliance with this Statewide Permit, the Department developed the Storm Water Management Plan (SWMP) to address storm water pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP describes the minimum procedures and practices Caltrans uses to reduce pollutants in storm water and non-storm water discharges. It outlines procedures for selecting and implementing Best Management Practices (BMPs).

Municipal Separate Storm Sewer System Program: The USEPA defines a Municipal Separate Storm Sewer System (MS4) as any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public entity having jurisdiction over storm water discharges. As part of the NPDES, USEPA initiated a program requiring that entities having MS4s apply to their local RWQCBs for discharge permits. The program proceeded through two phases: Under Phase I, the program initiated permit requirements for designated municipalities with populations of 100,000 or greater. Phase II expanded the program to municipalities with populations less than 100,000.

Construction Activity Permitting: A renewed General Permit for Construction Activities (Order No. 2009-0009-DWQ) was adopted on September 2, 2009. This permit regulates discharges from construction sites that result in a disturbed soil area (DSA) of 1 acre or greater, and/or are part of a common plan of development. Section H.2, Construction Program Management of the current Statewide Permit, states "The Construction Management Program shall be in compliance with requirements of the NPDES General Permit for Construction Activities." The new draft Statewide Permit **Condition.F** states the following: "Compliance with the Statewide Construction Storm Water General Permit (CGP) construction activities are not covered under this MS4 Permit. Caltrans shall electronically file Permit Registration Documents (PRD) for coverage under the CGP..." Aside from projects having less than 1 acre DSA, the new Statewide Permit approaches CGP compliance as a separate process. The CGP requires applicants to develop and implement an effective Storm Water Pollution Prevention Plan (SWPPP). The SWPPP needs to be prepared prior to beginning construction activities.

By law, all storm water discharges associated with construction activity where clearing, grading, and excavation results in soil disturbance of at least 1-acre must comply with the CGP. This requires completing a Risk Level Determination. This considers elements linked to erosion and sediment transport potential as well as beneficial uses associated with the receiving waters. Projects are classified into Risk Levels 1 - 3. Permit requirements become more stringent at higher risk levels. Risk Levels 2 and 3 require submitting Rain Event Action Plans (REAPs) and conducting monitoring. Monitoring includes sampling storm water runoff within the project site determining Numeric Action Levels (NALs). Exceeding NALs triggers revaluating BMP performance. Exceeding NALs triggers evaluating the construction site and conducting appropriate actions to reduce discharge potential. Numeric Effluent Levels (NELs) apply for Risk Level 3 projects. NELs are determined from sampling and analyzing receiving waters and are enforceable. Exceeding NELs may generate a Notice of Violation and potentially enforcement actions.

Risk Level 3 projects having more than 30 acres of DSA are required to conduct bioassays on watercourses traversing the construction area.

Currently, Caltrans' NPDES permit requiring coverage under the CGP allows Caltrans to submit a Notice of Construction (NOC) and Notice of Completion of Construction (NOCC) to the RWQCB. Upon new NPDES permit adoption, the new process will require submitting Notices of Intent (NOI) and Notices of Termination (NOT) in accordance with the CGP. The new process will empower the RWQCBs to determine when a project meets final stabilization conditions for acquiring closure. This may prolong the period a project remains subject to the CGP requirements.

During the construction phase, Caltrans' Standard Special Conditions requires appropriate selection and deployment of both structural and non-structural BMPs. These BMPs must achieve performance standards of Best Available Technology economically achievable/Best Conventional Pollutant Control Technology (BAT/BCT) to reduce or eliminate storm water pollution.

Affected Environment

This project is located in the Redwood Hydrologic Unit (HU), Beaver Hydrologic Area, and an undefined Hydrologic Sub-Area (HSA) 107.20. Sedimentation and siltation TMDLs have been adopted for the Redwood Creek HU. It is also included on the 2006 CWA Section 303(d) list as impaired by temperature. Both the TMDLs and Section 303(d) listing apply to the HSA associated with the project.

The project is located at the headwaters of watercourses hydraulically connected to Redwood Creek. The waters include four intermittent drainages, three roadside ditches, four culverts, and five roadside seep wetlands. Traditional navigable waters were not identified in the delineation study area. The minimum distance to the creek is about 0.4 miles.

Two existing cross culverts, a 24" corrugated steel pipe (CSP) at post mile 20.26, and an 18" CSP at post mile 20.43, are damaged, have eroded inverts which contribute to the landslide conditions and cause subsurface erosion of fill material.

Environmental Consequences

The shoulder widening provides an opportunity to regrade the depressions that collect water on the southwest (upslope) side of the roadway, and to convey the water into the culverts more efficiently. A lined ditch is proposed on the south side of the road to collect the water that is not collected by the first culvert (PM 20.26), and convey it down to the next culvert (PM 20.43).

The old road alignment in the upslope side also provides several areas of retained water seeping into the failure slopes. Standing water would be eliminated by grading to drain into the new roadway culverts.

A slope failure could become a chronic sediment source discharging to the impacted watershed. Construction of this project could have the following water quality impacts:

- Sediment transport – construction will require having disturbed soil areas (DSA) which have potential to transport sediment and increase turbidity in receiving waters.
- Increased turbidity – increases in turbidity in receiving waters would be transitory and limited to intermittent streams.
- Shade canopy loss – tree and shrub removal is needed to construct this project, resulting in shade canopy loss that could last a relatively long time until plants are re-established. While the removal of shade canopy could affect the microclimate in the project area, it is unlikely to cause an increase in water temperature to Redwood Creek itself. The higher temperatures occur during the summer when intermittent drainages in the project would likely be dry.
- Fill or dredge jurisdictional water – as noted in the Biological Resources section of this document, the project would fill wetland seeps and would alter intermittent drainages.
- Riparian vegetation removal – adjacent to the wetland seeps and intermittent drainages, the riparian vegetation would be minimally impacted by construction activities and vegetation clearing.
- Discharging high pH water – constructing the retaining wall entails the use of cement products for soldier piles and tiebacks. Bore holes are needed during this construction. Vertical bore holes are needed to install soldier piles. The bore holes are backfilled with concrete. Boring holes could expose groundwater to contact with cement products thereby creating a high pH waste.

- Chemical discharges – there is a low potential for chemical discharges from accidental spills of lubricant and/or fuel releases from vehicles and heavy equipment.
- Low-threat discharges (groundwater) related to dewatering activities – discharging uncontaminated groundwater to receiving waters is considered a low-threat discharge and requires a permit from the North Coast Regional Water Quality Control Board.

Avoidance, Minimization, and/or Mitigation Measures

During the construction phase, Caltrans' Standard Special Conditions require appropriate selection and deployment of both structural and non-structural BMPs. These BMPs must achieve performance standards of Best Available Technology economically achievable/Best Conventional Pollutant Control Technology (BAT/BCT) to reduce or eliminate storm water pollution.

Any potential impacts resulting from the project would be limited and temporary. Implementing appropriate BMPs would greatly reduce or eliminate these temporary impacts. The project does not alter any existing conditions that would trigger long-term impacts. Instead, permanently stabilizing locations may provide long-term water quality benefits by preventing a large scale slope failure that could contribute significant soil erosion and deposition at stream headwaters that flow to Redwood Creek. A slope failure could become a chronic sediment source discharging to the impacted watershed.

Potential sediment transport and turbidity increases would be avoided and minimized through the timing of completing project activities during the summer season and through the use of effective combination of erosion and sediment control BMPs.

Post-construction revegetation would restore shade canopy as the plants become established.

Filling of jurisdictional waters would be mitigated off-site in compliance with NCRWQCB's Section 401 water quality certification and the U.S. Army Corps of Engineers Nationwide Permit.

Riparian vegetation and post-construction revegetation would be planted onsite and additional plantings would take place in conjunction with off-site wetland mitigation.

Liquid and solid concrete waste containment is planned during the drilling of bore holes. Waste stream materials would then be transported to an appropriately licensed disposal facility or recycled at a concrete batch facility.

Standard Special Provision (SSP) 07-346 is routinely written in the contract for addressing source control of lubricants and fuels. Source control includes appropriate material storage and handling. Substantial spills within the construction zone would trigger immediate emergency responses to contain, mitigate and report the incident. The potential for chemical discharges resulting in significant water quality impacts is low.

Uncontaminated groundwater would be contained and disposed of at an area located outside jurisdictional receiving waters. Groundwater may be infiltrated, disposed on vegetation, or be used for dust control. Groundwater would not be disposed where it could become a concentrated flow.

Project Plans, Specifications, and Estimates (PS&E) would include language to address storm water management and water quality protection measures. The Contractor would be required to prepare a Storm Water Pollution Prevention Plan (SWPPP) in compliance with the Statewide Construction General Permit conditions during the construction phase.

Climate Change

This section evaluates the project's potential to contribute to climate change.

Regulatory Setting

In 2002, with the passage of Assembly Bill 1493 (AB 1493), California launched an innovative and pro-active approach to dealing with Greenhouse Gas (GHG) emissions and climate change at the state level. Assembly Bill 1493 requires the California Air Resources Board (CARB) to develop and implement regulations to reduce automobile and light truck GHG emissions. California is expected to enforce its standards for 2009 to 2011 and then look to the federal government to implement equivalent standards for 2012 to 2016. On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this Executive Order is to reduce California's GHG emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020, and 3) 80 percent below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (AB 32, signed September 27, 2006), the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating that CARB create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 (signed October 18, 2006further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

Executive Order S-01-07 (signed January 18, 2007) set forth the low carbon fuel standard for California. Under the executive order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

According to recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate change in California Environmental Quality Act (CEQA) Documents (March 5, 2007), an individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may participate in a potential impact through its incremental contribution combined with the contributions of all other sources of GHG.

In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable." See CEQA Guidelines sections 15064(i)(1) and 15130. As part of its supporting documentation for the Draft Scoping Plan, CARB recently released an updated version of the GHG inventory for California (June 26, 2008). Shown below is a graph from that update that shows the total GHG emissions for California for 1990, 2002-2004 average, and 2020 projected if no action is taken.

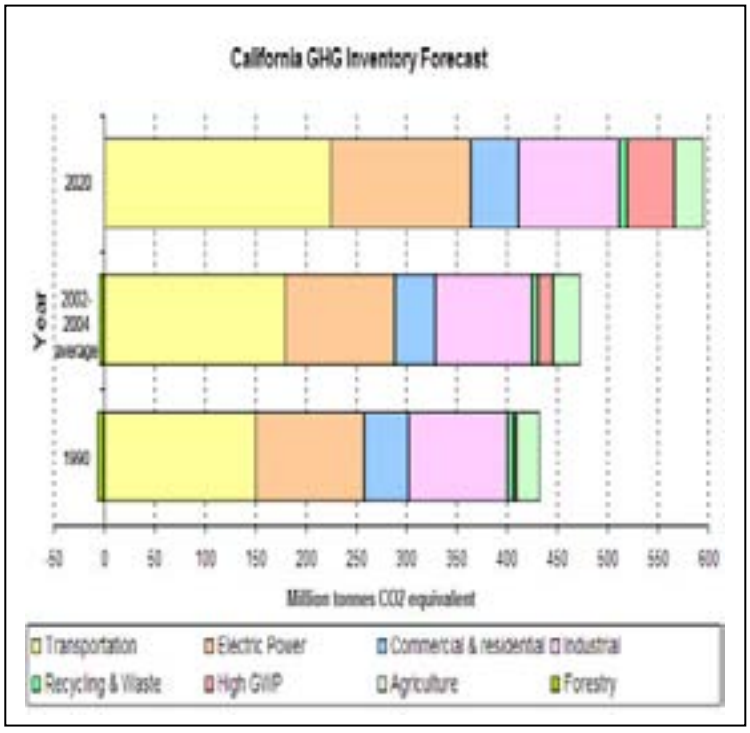


Figure 1 - California Greenhouse Gas Inventory

Taken from : http://www.arb.ca.gov/cc/inventory/data/forecast.htm

Caltrans and its parent agency, the Business, Transportation, and Housing Agency, have taken an active role in addressing Greenhouse Gas (GHG) emission reduction and climate change. Recognizing that 98 percent of California's GHG emissions are from the burning of fossil fuels and 40 percent of all human made GHG emissions are from transportation (see Climate Action Program at Caltrans (December 2006), Caltrans has created and is implementing the Climate Action Program at Caltrans that was published in December 2006. This document can be found at: http://www.dot.ca.gov/docs/ClimateReport.pdf

Project Analysis

This is a roadway stabilization project, and would not increase or change long-term traffic. Therefore, no increase in operational GHG emissions is anticipated to occur with the project.

Construction Emissions

GHG emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction GHG emissions include emissions produced as a result of material processing, emissions produced by onsite construction equipment, and emissions arising from traffic delays due to construction. Construction of this project would produce a small amount of GHG emissions associated with the operation of construction equipment and construction vehicles. These emissions would be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases. In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be minimized to some degree by longer intervals between maintenance and rehabilitation events.

CEQA Conclusion

While construction will result in a slight increase in GHG emissions during construction, it is anticipated that the project will not result in any increase in operational GHG emissions. While it is Caltrans' determination that, in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct impact and its contribution on the cumulative scale to climate change, Caltrans is firmly committed to implementing measures to help reduce GHG emissions. These measures are outlined in the following section.

AB 32 Compliance

Caltrans continues to be actively involved on the Governor's Climate Action Team as CARB works to implement the Governor's Executive Orders and help achieve the targets set forth in AB 32. Many of the strategies Caltrans is using to help meet the targets in AB 32 come from the California Strategic Growth Plan, which is updated each year. The Strategic Growth Plan targets a significant decrease in traffic congestion below today's level and a corresponding reduction in GHG emissions. The Strategic Growth Plan proposes to do this while accommodating growth in population and the economy. A suite of investment options has been created that combined together yield the promised reduction in congestion.

As part of the Climate Action Program at Caltrans (December 2006, http://www.dot.ca.gov/docs/ClimateReport.pdf), Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high density housing along transit corridors. Caltrans is working closely with local jurisdictions on planning activities; however, Caltrans does not have local land use planning authority. Caltrans is also supporting efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new

cars, light and heavy-duty trucks; Caltrans is doing this by supporting on-going research efforts at universities, by supporting legislative efforts to increase fuel economy, and by its participation on the Climate Action Team. It is important to note, however, that the control of the fuel economy standards is held by EPA and CARB. Lastly, the use of alternative fuels is also being considered; Caltrans is participating in funding for alternative fuel research at UC Davis.

Adaptation Strategies

"Adaptation strategies" refer to how Caltrans and others can plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, storm surges and intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damaging roadbeds by longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects would vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

Climate change adaptation must also involve the natural environment as well. Efforts are underway on a statewide-level to develop strategies to cope with impacts to habitat and biodiversity through planning and conservation. The results of these efforts will help California agencies plan and implement mitigation strategies for programs and projects.

On August 3, 2009, the Natural Resources Agency, in cooperation and partnership with multiple state agencies, released the 2009 California Climate Adaptation Strategy Discussion Draft, which summarizes the best known science on climate change impacts in seven specific sectors and provides recommendations on how to manage against those threats. The release of the draft document set in motion a 45-day public comment period. Led by the California Natural Resources Agency, numerous other state agencies were involved in the creation of discussion draft, including Environmental Protection; Business, Transportation and Housing; Health and Human Services; and the Department of Agriculture. The discussion draft focuses on sectors that include: Public Health; Biodiversity and Habitat; Ocean and Coastal Resources; Water Management; Agriculture; Forestry; and Transportation and Energy Infrastructure. The strategy is in direct response to Gov. Schwarzenegger's November 2008 Executive Order S-13-08 that specifically asked the Natural Resources Agency to identify how state agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. As data continues to be developed and collected, the state's adaptation strategy will be updated to reflect current findings.

Currently, Caltrans is working to assess which transportation facilities are at greatest risk from climate change effects. However, without statewide planning scenarios for

relative sea level rise and other climate change impacts, Caltrans has not been able to determine what change, if any, may be made to its design standards for its transportation facilities. When statewide planning scenarios become available, Caltrans will be able to review its current design standards to determine what changes, if any, may be warranted in order to protect the transportation system from sea level rise.

Cumulative Impacts

Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of this project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor, but collectively substantial, impacts taking place over a period of time.

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive types of agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

CEQA Guidelines, Section 15130, describes when a cumulative impact analysis is warranted and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts, under CEQA, can be found in Section 15355 of the CEQA Guidelines.

The CEQA definition of cumulative impact comes from the Office of Planning and Research (OPR). Section 15355 of OPR's CEQA Guidelines provides the following context:

Cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.

a. The individual effects may be changes resulting from a single project or a number of separate projects.

b. The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future

projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

Affected Environment

Route 299 traverses eastward over the Coast Range crossing through three main watersheds: Mad River, roughly between post miles 0.0 and 18.4; Redwood Creek, between post miles 18.5 and 29; and Trinity River from post mile 29 in Humboldt County eastward approximately 150 miles to Redding in Shasta County.

Multiple highway improvement projects are proposed to be developed on Route 299 between post miles 5.45 and 38.6 (Blue Lake to Willow Creek), including safety improvements such as curve corrections, installation of rumble strips, guardrail and shoulders, and slope stabilization improvements. Each of these projects is located in the Trinity Scenic Byway. Five of the projects are in the Redwood Creek watershed, one project spans the distance of 33 miles between Blue Lake and Willow Creek, and several others are located in the Willow Creek/Trinity River watershed.

There are several resources to be considered for potential cumulative impacts:

- landform modification that could result in an increase in exposed soils and excavation that may cumulatively contribute sediments to an impaired watershed;
- scenic impacts to the highway landscape from vegetation removal, landform modification and wall construction along a scenic byway;
- noise impacts to wildlife and residences from placing rumble strips on the highway landscape where vegetation has been removed that might otherwise ameliorate the noise.

Environmental Consequences

The two tieback walls at the Green Point Sink project would be built below the existing highway road grade, similar to a recently constructed wall at post mile 21.5. The travelling public may not even notice the walls upon completion of construction as the walls would not be visible from the highway, except at a long distance of more than a mile away looking across the Redwood Creek valley from Sabertooth Curve at post mile 23.6 or Circle Point Curve at post mile 25.05. Similar to other proposed projects, the visual impacts would be temporary for most of the vegetation removal, except where permanent vegetation removal would be necessary for utility line maintenance. Some of the other projects have a greater potential than Green Point Sink for having an effect on the visual landscape through landform modification.

Also similar to other projects that would be constructed or have already been constructed on Route 299, the slopes laid bare during construction would be revegetated, except for the 30’ wide band associated with utility relocation. That band would be cleared and maintained by Pacific Gas and Electric Co. as devoid of vegetation, to comply with their utility line maintenance policies.

Installation of rumble strips could increase noise beyond the ambient traffic noise. Although the noise impacts have not been specifically studied at the project location, they are recommended to be studied for future projects on Route 299.

Avoidance, Minimization, and/or Mitigation Measures

Utilization of Best Management Practices during construction and for site management post-construction, such as installing traction sand traps and revegetating exposed soil areas, would minimize the potential to contribute individually and cumulatively to the sediments in the watershed. Revegetation further aids in buffering noise from rumble strips to nearby residences.

Some rumble strip designs are less audible but still achieve results for alerting drivers through vibrations. These shallower and elliptical pattern-shaped rumble strips, together with the addition of a thermoplastic painted surface, reduce the auditory impacts while maintaining the vibratory sensations needed to alert the errant drivers. This rumble strip design is being considered for larger application to Route 299, including at the subject Green Point Sink project location.

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List of Technical Studies

- Biological Resources
- Cultural Resources
- Geotechnical
- Water Quality
- Hydrology